

## REMARKS/ARGUMENTS

### 35 USC 112 (1<sup>st</sup> paragraph)

The Office rejected **claims 1-16** under 35 USC 112 (1st paragraph) as failing to comply with the written description requirement.

More specifically, and with respect to **claims 1 and 12**, the examiner stated that the specification would not disclose the physical solvent to be carbon dioxide depleted. The applicant respectfully disagrees and points to page 13, lines 15-26 of the present specification in which clear and unambiguous description of the solvent as being CO<sub>2</sub> depleted is provided:

"...the rich solvent (after providing work and/or cooling) is further let down in pressure to a pressure sufficient to release at least 70% (more typically at least 90%, and most typically at least 95%) of the dissolved carbon dioxide. The so produced carbon dioxide is then separated in a separator (typically operating at atmospheric and sub-atmospheric pressure) from the lean solvent...the lean solvent from the separator is further let down in pressure via JT valve and fed into a vacuum separator..."

Moreover, the applicant even provided express definition for such lean solvent on page 16, lines 9-15:

"...The term "lean hydrogen sulfide-containing physical solvent" as used herein refers to a physical solvent from which at least a portion of acid gas (typically carbon dioxide) contained in the physical solvent has been removed in a flash process, and which contains at least 100 ppm hydrogen sulfide, and more typically at least 200 ppm hydrogen sulfide. As further shown herein, the term "substantially hydrogen sulfide-free stripping gas" refers to a stripping gas that contains less than 1000 ppm, and more typically less than 10 ppm hydrogen sulfide..."

In the event that the examiner would take the position that the CO<sub>2</sub> depleted solvent may still include both CO<sub>2</sub> and H<sub>2</sub>S, it is noted that the term CO<sub>2</sub> "depleted" does not require that the solvent is free of CO<sub>2</sub>. The term "deplete" is defined in the Merriam-Webster online dictionary as "to lessen markedly in quantity" ([www.merriam-webster.com/dictionary/deplete](http://www.merriam-webster.com/dictionary/deplete)), thus clearly supporting a solvent that may include both CO<sub>2</sub> and H<sub>2</sub>S. However, such solvent will have a markedly reduced concentration in CO<sub>2</sub>. Clearly, the rejection of claims 1 and 12 as lacking adequate description is improper and should be withdrawn.

### **Further Remarks**

The examiner noted in the section "Response to Arguments" starting on page 3 that there would be no pressure range in the applicant's specification for the high and intermediate pressure flash vessels, and as such Miller's intermediate and atmospheric flash vessels would read on the claimed high and intermediate pressure flash vessels. The applicant disagrees. It is readily and unambiguously apparent from the applicant's specification that the claimed intermediate flash vessel can not be an atmospheric flash vessel as asserted by the examiner since the flashed solvent from the applicant's intermediate pressure flash vessel is further flashed in multiple successive steps (see c.g., Figure 2, elements 113, 115, and 117).

The examiner further seemed to argue that by virtue of use of the term 'coupled' in claims 1 and 12 for the flash vessel and vacuum stripper, Miller's configuration would read on the claimed subject matter as Miller indirectly provides a lean H<sub>2</sub>S free stripping gas to the stripper via the absorbers. Such argument is not persuasive as the fraction that is provided to the vacuum stripper in Miller is not what is provided by the flash vessel. In contrast, the presently claimed configurations and methods provide the substantially hydrogen sulfide-free stripping gas to the vacuum stripper without separation in an absorber. While the applicant's prior remarks and arguments are maintained and are not reiterated here, claims 1 and 12 were amended to make the above distinction even more clear.

With respect to the Office's arguments for the combination of Miller with "environmental expert" and Mak (U.S. Pat. No. 7,192,468) the applicant enthusiastically agrees with the office's reminder that the test for combination would be "...what the combined teachings would have suggested to those of ordinary skill in the art..." Applied to the instant case, Miller teaches a hybrid solvent gas treatment scheme for treatment of coal gasification effluent in which a physical solvent is used to absorb CO<sub>2</sub> and H<sub>2</sub>S and in which a chemical solvent is then used to absorb H<sub>2</sub>S in a subsequent step. Clearly, Miller critically relies on the chemical solvent circuit to achieve the desired purpose and therefore does not suggest combination with Mak, which expressly teaches that desulfurized gas (see e.g., Table 1) is fed to the absorber. To make Mak's position even more clear, it is noted that Mak suggests H<sub>2</sub>S scavenger beds upstream of the absorber. For at least this reason, it should be apparent that there is no suggestion to combine the teachings of Mak and Miller.

On a finer note, it should be appreciated that Mak is not concerned with stripping H<sub>2</sub>S from a lean solvent to produce an ultra-lean solvent. Thus, Mak also fails to produce a hydrogen sulfide-containing lean physical solvent. Indeed, Mak uses a vacuum stripper to polish flashed solvent with a hydrocarbon stream, which is entirely inconsistent with Miller.

Still further, it is noted that in the section "Response to Arguments", the office failed to provide the any reasoned statement as to how and why the cited references would provide motivation to combine the teachings such as to arrive at the presently claimed subject matter. Thus, a proper rejection was not established.

#### **Request For Allowance**

Claims 1-16 are pending in this application. The applicant requests allowance of all pending claims.

Respectfully submitted,  
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